

Unit 2

Day 5

Section 1.7

Rationalizing again

MULTIPLY:

$$\text{CASE 1 - } (\sqrt{2} - \sqrt{5})(\sqrt{2} - \sqrt{5})$$
$$2 - 2\sqrt{10} + 5 = 7 - 2\sqrt{10}$$

$$\text{CASE 2 - } (\sqrt{2} + \sqrt{5})(\sqrt{2} - \sqrt{5})$$
$$2 - 5 = -3$$

Why is the result a binomial in CASE 1 and a monomial in CASE 2?

Rationalize the denominator.

$$\begin{aligned} 1) \quad & \frac{\sqrt{3}}{\sqrt{2} + \sqrt{3}} \cdot \frac{\sqrt{2} - \sqrt{3}}{\sqrt{2} - \sqrt{3}} = \frac{\sqrt{6} - 3}{2 - 3} \\ & = \frac{\sqrt{6} - 3}{-1} \\ & = \boxed{\frac{3 - \sqrt{6}}{\sqrt{6} + 3}} \end{aligned}$$

2)

$$\frac{\sqrt{2}-2}{4\sqrt{2}-3\sqrt{3}} \cdot \frac{4\sqrt{2}+3\sqrt{3}}{4\sqrt{2}+3\sqrt{3}} =$$

$$\frac{8+3\sqrt{6}-8\sqrt{2}-6\sqrt{3}}{32-27} =$$

$$\frac{8+3\sqrt{6}-8\sqrt{2}-6\sqrt{3}}{5}$$

$$3) \quad \frac{2x}{3 + \sqrt{x+y}} \cdot \frac{3 - \sqrt{x+y}}{3 - \sqrt{x+y}} =$$

$$\frac{6x - 2x\sqrt{x+y}}{9 - (x+y)} = \frac{6x - 2x\sqrt{x+y}}{9 - x - y}$$

Continue with Day 5 Instruction, if time.

Homework:

Day 4 homework

Continue with Day 5 Instruction, if time.